UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,718	12/14/2001	Philip J. Kellman	42055/SAH/K415	9540

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EXAMINER
HARRIS, CHANDA L

ART UNIT	PAPER NUMBER
3714	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/020,718	KELLMAN, PHILIP J.
	Examiner	Art Unit	
	Chanda L. Harris	3714	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>2/24/05</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-31 and 63-72</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-31 and 63-72</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Status of Claims

In response to the Amendment filed on 6/22/04, Claims 1-31 and 63-72 are pending.

Claims 32-62 are cancelled.

Specification

The abstract of the disclosure is objected to because it exceeds the maximum word

requirement of 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-31, 65, 68, and 72 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ditto (US 6,270,352) in view of Boon (US 6,022,221).

1.   [Claims 1,21,31]: Regarding Claims 1,21, and 31, Ditto discloses a computer

including one or more memory portions (e.g. RAMs). See Col.4: 28-33. Ditto discloses

software for implementing a trial loop (i.e. single presentation of a problem), wherein the

learning trials are presented to the student and response data are collected. See

Col.13: 51-59. Ditto's invention is capable of selecting the learning item with highest

priority score (i.e. highest performance number) since an item with a high priority score

has a higher probability of being selected than those with a low priority score. See

Col.14: 20-37. Ditto discloses software for implementing a sequencing algorithm,

wherein the algorithm sequences the learning items to be presented as a function of the

response data collected from prior learning trials. See Col.13: 31-38. Ditto discloses

the sequencing algorithm increasing the priority score (i.e. performance number) for

each incorrectly answered learning item and decreasing the priority score for each

correctly answered learning item, wherein the probability of a particular learning item

being again selected by the problem selector increases or decreases as a function of

priority score. See Col.14: 20-37. Ditto discloses a computer including a central

processing unit, a visual display device, at least one input device, and one or more

memory portions. See FIG.7. Ditto discloses wherein each learning item has an

associated priority score (i.e. performance number). See Col.14: 13-18. Ditto discloses

wherein the response data includes data relating to speed and accuracy (i.e. the

student's response time and the correctness of student's response). Ditto associates

with a learning item a priority score (i.e. performance number) as a function of the

response data collected from prior learning trials. See Col.14: 7-18. Ditto's discloses

preventing one or more learning items from being presented in at least one learning trial

based upon the priority score associated with the learning item. See Col.15: 23-60.

Ditto does not disclose expressly making it impossible (i.e., retires items) for one

or more learning items (i.e., q/a pairs) to be presented in at least one or more learning

trials (i.e., review) based upon the priority score (i.e., Q) associated with the learning

item. However, Boon teaches such in Col.5: 14-19, 33-44. Therefore, at the time of the

invention, it would have been obvious to one of ordinary skill in the art to incorporate

making it impossible for one or more learning items to be presented in at least one or

more learning trials based upon a priority score associated with the learning item into

the method and system of Ditto, in light of the teaching of Boon, in order to eliminate

redundancy of learning items that have been learned.

Ditto does not disclose expressly a problem database containing a plurality of

learning items (i.e. a database with records containing problems or questions), wherein

a learning item is presented on each learning trial or a trial record database for storing

response data regarding the student's response to each learning item (i.e. user's

progress on each memory item) or the response data further including the number of

trials since each particular learning item was last presented (i.e. intervals). However,

Boon teaches the concept of using a database to store data in Col.2: 66-Col.3: 1 and

Col.4: 28-37. Boon also teaches the concept of response data indicating the number of

trials since a learning item was last presented. See Col.2: 22-42. Therefore, at the time

of the invention, it would have been obvious to one of ordinary skill in the art to

incorporate databases and the response data indicating the number of trials since a

learning item was last presented into the method and system of Ditto, in light of the

teaching of Boon, in order to store problems or questions with their correct answers or

responses, to track the user's progress, and improve retention of learning material.

2.   [Claim 2]: Regarding Claim 2, Ditto discloses wherein the response data

collected for each learning trial includes the student's accuracy (i.e. whether or not the

answer was correct) in answering the presented learning item and the student's

response speed (i.e. the time it takes to respond to a problem) if the item was correctly

answered. See Col.13: 56-59.

3.   [Claim 3]: Regarding Claim 3, Ditto discloses wherein each learning trial includes

a priority score (i.e. performance number) associated with the particular learning item.

See Col.13: 31-42.

4.   [Claims 4,22]: Regarding Claims 4 and 22, Ditto discloses wherein the

sequencing algorithm continuously updates the priority score of each learning item

based on the response data collected on the immediately preceding learning trial. See

Col.13: 31-38.

5.   [Claim 5]: Regarding Claim 5, Ditto discloses wherein the number of trials since a

particular learning item was last presented is a variable used by the sequencing

algorithm in continuously updating the priority score of each learning item. See Col.15:

23-60.

6.   [Claim 6]: Regarding Claim 6, Ditto discloses wherein the relative importance of

the student's speed and accuracy in sequencing of learning items is a parameter. See

Col.14: 7-13.

7.   [Claim 7]: Regarding Claim 7 Ditto discloses wherein the software for

implementing a trial loop includes a problem selector, the problem selector selecting the

learning item with the highest priority score (i.e. high performance number) for

presentation to the student. See Col.14: 29-36.

8.   [Claims 8, 23]: Regarding Claims 8 and 23, Ditto discloses wherein when a

subset of the plurality of learning items have the same high priority score (i.e.

corresponding performance numbers), the problem selector selects the learning item for presentation at random from the subset of learning items with the same high priority score. See Col.16: 13-19.

9.   [Claims 9-11]: Regarding Claims 9-11, Ditto discloses wherein the sequencing algorithm increases the priority score for each incorrectly answered learning item, wherein the probability of each incorrectly answered learning item being again selected by the problem selector increases, whereby the delay in learning item reappearance decreases; wherein the sequencing algorithm decreases the priority score for each correctly answered learning item, wherein the probability of that learning item being again selected by the problem selector decreases, whereby the delay in learning item reoccurrence increases; wherein the sequencing algorithm decreases the priority for each correctly answered learning item as a function of the student's response time in answering the question, wherein the delay in a particular learning item's reappearance increases as the student's response time to the particular learning item decreases . See Col.14: 19-28 and 30-37.

10.   [Claims 12, 25]: Regarding Claims 12 and 25, Ditto does not discloses expressly wherein the sequencing algorithm prevents the same learning item from recurring for a predetermined number of trials. However, Boon teaches such in Col.4: 21-23. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the aforementioned limitation into the method and system of Ditto, in light of the teaching of Boon, in order to test level of retention of the ;earning item.

11.   [Claims 13-14, 26-27]: Regarding Claims 13-14 and 26-27, Ditto discloses

wherein each learning item may be assigned an initial priority score (i.e. performance

number) and wherein the sequencing algorithm does not modify the priority score of

each item until after its first presentation. See Col.13: 31-38.

12.   [Claims 15,28]: Regarding Claims 15 and 28, Ditto discloses wherein the initial

order of appearance of all, or some, of the learning items may be determined in

advance by assigning all, or some, of the learning items initial priority scores in

ascending or descending order (i.e. classification scheme). See Col.21:23-26.

13.   [Claims 16,29]: Regarding Claims 16 and 29, Ditto does not disclose expressly

wherein the software for implementing the trial loop includes a learning item retirement

feature, wherein the learning items are retired from the problem database upon meeting

a predetermined learning criterion. However, Boon teaches such in Col.5: 37-41.

Therefore, at the time of the invention, it would have been obvious to one of ordinary

skill in the art to incorporate the aforementioned limitation into the method and system

of Ditto, in light of the teaching of Boon, in order eliminate redundancy.

14.   [Claims 17,30]: Regarding Claims 17 and 30, Ditto discloses wherein a learning

criterion for each particular learning item is a function of the student's accuracy in

answering the learning item, and response speed for each correct answer, over a

predetermined number of repetitions of the learning item. See Col.14: 30-36.

15.   [Claim 18-20]: Regarding Claims 18-20, Ditto does not discloses expressly

wherein a session resumption feature stores an individual learner's data for learning

items in terms of problem retirement status for continuing the learning during another

session at a later time; wherein the session resumption feature allows learning to

continue at another time whence the retirement count of retired learning items is

reduced, bringing them back for review and "re-retiring" if performance still meets

learning criteria; wherein the session resumption feature allows previously retired

learning items brought back for review to rejoin the active problem set if performance

criteria do not meet the previously established learning criteria. However, Boon teaches

such in Col.5: 37-49. Therefore, at the time of the invention, it would have been obvious

to one of ordinary skill in the art to incorporate the aforementioned limitation into the

method and system of Ditto, in light of teaching of Boon, in order to measure memory of

the learning item.

16.   [Claim 24]: Regarding Claim 24, Ditto discloses wherein the sequencing

algorithm decreases the priority score for each correctly answered learning item as a

function of the student's response time in answering the question, wherein the faster the

student's response time the greater the decrease in priority score. See Col.14: 29-37.

17.   [Claims 65, 68, 72]: Regarding Claims 65, 68, and 72, Ditto does not disclose

expressly wherein relative importance of speed and accuracy may be adjusted to suit

different learning material, tasks or individuals. However, Boon teaches the concept of

a parameter (e.g. retirement criteria) wherein the one or more parameters may be

adjusted to suit different individuals (e.g. bringing material back in an active mode if

forgotten). See Col.5: 36-46. Therefore, at the time of the invention, it would have been

obvious to one of ordinary skill in the art to incorporate the aforementioned limitation

into the method and system of Ditto, in light of the teaching of Boon, in order to facilitate

in retention of material.

Claims 63-64, 66-67, and 69-71 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ditto/Boon as applied to claims 1, 21, and 31 above, and

further in view of Ho et al. (US 5,863, 208).

[Claims 63-64, 66-67, 69-71]: Regarding Claims 63-64, 66-67, and 69-71, Ditto/Boon

does not disclose expressly wherein the sequencing algorithm sequences categories of

learning items (e.g. High School Algebra, Integers), wherein the learning items comprise

categories of learning items, and building a plurality of learning items representing

categories of items. However, Ho teaches categories of learning items in Col.3: 11-50.

Therefore, at the time of the invention, it would have been obvious to one of ordinary

skill in the art to incorporate the aforementioned limitations into the method and system

of Ditto/Boon, in light of the teaching of Ho, in order to facilitate instruction in a subject.

Response to Arguments

Applicant's arguments filed 2/24/05 have been fully considered but they are not

persuasive. See rejection above. Applicant's amendment necessitated the new

ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS**

MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chanda L. Harris whose telephone number is 571-272-

4448. The examiner can normally be reached on M-F 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jessica Harrison can be reached on 571-272-4449. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Chanda L. Harris
Primary Examiner
Art Unit 3714